Amendments to the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application:

Listing of Claims:

1. (Original) A method of screening an individual for increased risk of low folate status, said method comprising detecting a mutation in a human glutamate carboxypepidase II (GCPII) gene in a biological sample from said individual, wherein detection of the mutation is indicative of decreased ability to hydrolyse a terminal glutamate residue of a folypoly-γ-glutamate, which decreased ability is associated with low folate status.

2. (Original) The method of claim 1, wherein the mutation is a single nucleotide polymorphism.

3. (Currently amended) The method of claim [[3]] 2, wherein the single nucleotide polymorphism causes an amino acid substitution of H475Y.

4. (Original) A method of claim 1 wherein the mutation is detected by

(a) amplifying the GCPII gene, or a portion thereof containing the mutation, with a set of primers to provide an amplified product,

(b) sequencing the amplified product to obtain a sequence, and

(c) comparing the sequence of the amplified product with a known sequence of a wild-type GCPII gene,

wherein a difference between the sequence of the amplified product and the sequence of the wild-type GCPII gene indicates the presence of a mutation.

5. (Original) A method of claim 4, wherein said amplification is by polymerase chain reaction.

6. (Original) A method of claim 4, wherein said sequencing is performed by detecting the incorporation of a nucleotide into a strand complementary to a template strand by detecting the presence of a pyrophosphate released from the incorporated nucleotide.

7. (Original) A method of claim 1 wherein the mutation is detected by

(a) amplifying exon 13 of the GCPII gene with a set of primers to provide an amplified product,

(b) sequencing the amplified product to obtain a sequence, and

(c) comparing the sequence of the amplified product with a known sequence of exon 13 of a wild-type GCPII gene,

wherein a difference between the sequence of the amplified product and the sequence of the wild-type GCPII gene indicates the presence of a mutation.

8. (Currently amended) A method of claim 7, wherein said primers are

5'-CATTCTGGTAGGAATT[[]]TAGCA-3' (SEQ ID NO:29) and 5'-AAACACCACCTATGTTTAACA-3' (SEQ ID NO:30).

9. (Original) A method of claim 7, wherein said amplification is by polymerase chain reaction.

10. (Original) A method of claim 7, wherein said sequencing is performed by detecting the incorporation of a nucleotide into a strand complementary to a template strand by detecting the presence of a pyrophosphate released from the incorporated nucleotide.

11. (Original) A method of claim 1, wherein said mutation is detected by hybridizing DNA from said individual to a test nucleic acid under stringent conditions.

12. (Original) A method of claim 11, wherein either said DNA from said individual or said test nucleic acid is immobilized on a solid support.

13. (Original) A method of claim 1, wherein said mutation is detected by

(a) amplifying exon 13 said GCPII gene,

(b) subjecting said amplified exon 13 to digestion by restriction enzymes,

(c) separating the resulting restriction products to form a pattern of restriction fragment lengths, and

(d) comparing the pattern of restriction fragment lengths to a pattern of restriction fragment lengths formed by subjecting amplified exon 13 of a wild-type GCPII gene to the same restriction enzymes.

14. (Original) A method of claim 13, wherein said separation of the restriction products is by gel electrophoresis.

15. (Original) A method of claim 13, wherein the restriction enzyme is AccI.

16. (Original) A method of claim 15, wherein the pattern of restriction fragments of exon 13 of the GCPII gene of the individual shows restriction fragments selected from the group consisting of: 141 bases and 103 bases.

17. (Original) A method of claim 1, wherein said mutation is detected by specifically binding an antibody to a truncated product of the GCPII gene, wherein the specific binding of the antibody to the truncated gene product is indicative of a mutation impairing the ability of the GCPII gene product to digest a dietary folate.

18. (Original) A method of claim 17, wherein detection of said specific binding of said antibody and said truncated gene product is by ELISA.

19 (Original) A method of screening an individual for increased risk of low folate status comprising

(a) performing reverse transcriptase-PCR on mRNA from intestinal cells of the individual to amplify products of a GCPII gene, and

(b) determining the ratio of a variant product in which 93 bases of exon 18 are deleted to a normal product of the GCPII gene,

wherein a ratio of the variant form to the normal form greater than 1:3 indicates the individual is at increased risk of low folate status.

20. (Withdrawn) A mutation in a GCPII gene which impairs the ability of a product of the gene to hydrolyse a conjugated folate to release folic acid compared to a product of a wild-type GCPII gene.

21. (Withdrawn) A mutation of claim 20, wherein the ability of a product of the gene to hydrolyse a conjugated folate is reduced by 20 percent or more compared to a product of a wild-type GCPII gene.

22. (Withdrawn) A mutation of claim 20, wherein the mutation is a 93-base deletion resulting from the elimination of exon 18.

23. (Withdrawn) The mutation of claim 20, wherein the mutation is a single nucleotide polymorphism.

24. (Withdrawn) The mutation of claim 23, wherein the single nucleotide polymorphism causes an amino acid substitution of: H475Y.

25. (Withdrawn) A kit for the detection of a woman at increased risk for bearing a child with a neural tube defect, comprising:

(a) a container, and

(b) primers for amplifying a GCPII gene or portion thereof.

26. (Withdrawn) A kit of claim 25, further comprising instructions for detecting a mutation in the GCPII gene resulting in decreased ability of a product of the GCPII gene to hydrolyze a conjugated folate compared to the product of a wild-type GCPII gene.

27. (Withdrawn) A kit of claim 25, further comprising an AccI restriction enzyme.

28. (Withdrawn) A kit for the detection of an individual at increased risk for low folate status, comprising:

(a) a container, and

(b) primers for amplifying a GCPII gene or portion thereof.

29. (Withdrawn) A kit of claim 28, further comprising instructions for detecting a mutation in the GCPII gene resulting in decreased ability of a product of the GCPII gene to hydrolyze a conjugated folate compared to a product of a wild-type GCPII, wherein detection of such a mutation indicates the individual is at increased risk for low folate status.

30. (Withdrawn) A kit of claim 28, further comprising an AccI restriction enzyme

31. (New) A method of claim 1, wherein detection of the mutation is further indicative that the individual is at increased risk of hyperhomocysteinemia.